



Chem 29a: Organic Chemistry I Laboratory

Contact Details

Stephanie Murray

Office location: Shapiro Science Center 08B

*Since summer school is being conducted in a fully remote manner all meetings will occur virtually.

Students should not come to my office.*

Telephone: (781) 736-2545

Email: murray@brandeis.edu

I will make every attempt to answer emails in a timely manner (24-48 hours). However, emails received after 5:00 pm may not be responded to until the following day and emails received on weekends, breaks, and holidays may not be responded to until the next working day. Emails about assignments received on the due date may not receive a response. Please allow a minimum of 24 hours in advance with questions about any assignments. Please use your official Brandeis University email account for all communication in this course.

Meeting Times

Lectures

Monday, Tuesday, Wednesday, Thursday 1:00 PM – 3:00 PM EST, See LATTE for Zoom link

Instructor's Office Hours

Monday, Tuesday, Wednesday, Thursday 11:30 AM – 12:00 PM EST, See LATTE for Zoom link

Appointments at other times may be available. Email Prof. Murray if you need to schedule an appointment. Please note that, since office hours are immediately after Chem 25a, we will be using the same zoom room for Chem 25a and office hours. Please do not join before 11:30 and please be patient if we are wrapping up lecture when you join.

Lab TA Office Hours

Available on LATTE after first lab session.

Course Description

The CHEM 29a laboratory course presents approaches for the isolation and analysis of organic compounds. Various techniques are introduced, including extraction, distillation, chromatography, and crystallization. An emphasis is placed on structure determination through use of spectroscopic methods, as well as written and oral scientific communication.

Each experiment is comprised of two class meetings. The first will include a prelab lecture that introduces the experiment, a spectroscopy lecture, problem solving and discussion. The experiment will be conducted during the second lab meeting for each experiment.

Learning Goals:

- Interpret spectroscopic data in order to determine chemical structure
- Evaluate methods for purification and separation of organic compounds
- Connect textbook reactions with practical laboratory techniques
- Understand organic chemistry in the context of scientific literature
- Develop scientific communication skills through lab reports and presentations

Prerequisites

Prerequisite: A satisfactory grade (C- or better) in Chem 18b or Chem 19b or the equivalent. Co-requisite or Prerequisite: Chem 25a. Dropping Chem 25a necessitates written permission from the lab instructor to continue with the lab. May yield half-course credit toward rate of work and graduation. Two semester hour credits.

The table below lists the lab TAs. Their office hour times and Zoom room links are available on LATTE. While you are encouraged to go to your Lab TA's office hours, you may attend those of another TA if needed.

Lab TA	Email
Hannah Davies	hannahdavies@brandeis.edu
Isaac Paddy	isaacpaddy@brandeis.edu
Ishaan Bhatia	ishaanbhatia@brandeis.edu

Course Requirements

Academic Integrity

Every member of the University community is expected to maintain the highest standards of academic integrity. A student shall not submit work that is falsified or is not the result of the student's own effort. Infringement of academic honesty by a student subjects that student to serious penalties, which may include failure on the assignment, failure in the course, suspension from the University or other sanctions (see section 20 of R&R). Please consult Brandeis University Rights and Responsibilities for all policies and procedures related to academic integrity. Students may be required to submit work to TurnItIn.com software to verify originality. A student who is in doubt regarding standards of academic honesty as they apply to a specific course or assignment should consult the faculty member responsible for that course or assignment before submitting the work. Allegations of alleged academic dishonesty will be forwarded to the Department of Student Rights and Community Standards. Citation and research assistance can be found at [Brandeis Library Guides - Citing Sources](https://guides.library.brandeis.edu/c.php?g=301723) (<https://guides.library.brandeis.edu/c.php?g=301723>). What is allowed and is not allowed in terms of resources and group work will be clearly stated in this syllabus for each assignment type in this course

and will vary amongst assignments. Be sure to thoroughly read this syllabus and all instructions and complete the assignment as intended by the instructor.

Required Materials and Software

- BeyondLabz Virtual Labs – instructions for installation can be found here: <http://www.beyondlabz.com>. **You do not need to buy your own license, it will be provided during the first experiment.**
- ChemDraw software ChemDraw and Chem3D software, found here: <http://www.brandeis.edu/its/services/software-business-systems/software/index.html>. *The use of this software for drawing chemical structures will be required for all laboratory reports.*
- Organic Chemistry Lab Techniques, 2nd ed. by Lisa Nichols, 2017. Available **free of charge** at <http://organiclabtechniques.weebly.com>.
- Zoom software – instructions for installation and use can be found through ITS: <https://www.brandeis.edu/its/services/communication/zoom/>
- Microsoft Office Suite – instructions for installation of Office 365 ProPlus can be found through ITS: <https://www.brandeis.edu/its/services/software-business-systems/software/index.html>
- PDF Scanner App – for converting images to PDFs on a smartphone. There are many to choose from that are available free of charge.
 - Two good examples are Adobe Convert to PDF and GeniusScan.
 - If you are using an iPhone or an iPad, the *Notes* app has an option to convert images to PDFs.
- LATTE is the online course website at Brandeis. All course materials (e.g. course calendar, handouts, videos) will be available on LATTE, as well as class announcements and any schedule changes. LATTE link: <http://latte.brandeis.edu>.
- Compound structures, physical data, spectra, etc. can be found at <http://sigmaaldrich.com>.
- Gradescope will be used to turn in assignments in this course. You can access Gradescope at: <http://gradescope.com>. There are instructions for using Gradescope available on LATTE. Make sure you choose “Login with School Credentials” and use your Brandeis username and password to log in.

If you are having difficulty purchasing course materials (including equipment and other technology needs), please make an appointment with your Student Financial Services or Academic Services advisor to discuss possible funding options and/or textbook alternatives.

Laboratory Preparation and Safety

Prepared students make for a safer and more efficient lab experience. Lab preparation includes familiarizing yourself with techniques relevant to the experiment (assigned chapter readings and any handouts), and completing the prelab. Please note that there is a grade penalty for incomplete prelabs. *Ordinarily, lab safety requires a rigorously enforced dress code!* This semester, each experiment will be conducted virtually, so there will not be a dress code nor are safety goggles required.

Required Assignments

Attendance & Participation – Attendance and participation is required at all meetings of this course.

Day 1 of each experiment - attendance and participation will be assessed through the submission of your answers to questions that we complete during class (graded for completeness). Your answers to the practice problems covered during lecture are due by 5pm on the day of class on Gradescope. Since these are graded for completion, there will only be one question to assign to your work on Gradescope. Please just assign this to the first page of your work. All students will submit work to the same assignment on Gradescope regardless of who their TA is. The answer key to the problems will be released at 5pm on LATTE. Because the answer key is released immediately following the submission deadline, late submissions are not accepted. The lowest score will be dropped at the end of the semester.

Day 2 of each experiment - your TA will record your presence or absence during the lab session and credit will be given as part of your lab notebook score.

Laboratory Report (Prelab, Postlab & Notebook) – Each experiment will require a preliminary laboratory report (prelab), lab notebook, and postlab report (write-up & questions). Please see the Report Information handout for information to always include in sections of each lab report.

Download the appropriate lab report file from LATTE (e.g. prelab, electronic lab notebook, or postlab), and **do not modify any formatting**. ChemDraw software is required for drawing structures.

Prelabs: See the Report Information handout for prelab requirements. Your prelab is typically due at 5 pm on the first day of each experiment on Gradescope. **You will lose 5 points for each 24-hour period if your prelab is incomplete or not turned in at the beginning of the lab period.** Once the late penalty is greater than the total points possible on the assignment the assignment will no longer be accepted. You are encouraged to work on it before the start of lab. If you want to change your answers after hearing lab lecture you have time to do so before the 5 pm submission deadline. The exception to this is Experiment 1 where the prelab assignment is due at 1 pm on the start of Day 2 of Experiment 1. Submit prelab assignments on Gradescope. Be sure to pay attention to both the assignment title and the TA name to make sure you are submitting to the correct assignment. Make sure to properly assign the questions to their appropriate location in your work. If you submit to the wrong assignment and don't let your TA know or do not properly assign the problems to your work when submitting you may not receive credit for your work. Your TA should not have to go out of their way to find your submission.

During Lab & Lab Notebook: Have the experiment handout accessible (e.g. printed out, open on your computer) when you attend lab—you will refer to the data in it throughout your lab period. You are responsible for keeping an electronic notebook of your discussions, observations, and solutions during each lab period. Download and use the electronic lab notebook template from LATTE. For more information, see the Report Information handout. You will turn in the pages from your electronic lab notebook in with the postlab assignment for each experiment. BeyondLabz includes an electronic notebook where you can record your lab procedure, observations, and data. For the experiments using BeyondLabz, this record must be turned in with your postlab assignment as well. Notebook Pages are due on Gradescope along with your postlab write-up and questions for each experiment. Some experiments will use a notebook template from LATTE, others will use the built-in notebook in BeyondLabz, and others will use both. If both are used there will be separate assignments on Gradescope to upload each type. Be sure to pay attention to both the assignment title and the TA name to make sure you are submitting to the correct assignment. Since these are graded for completion, there will only be one question to assign to your work on Gradescope. Please select all of the pages of your submission for this question. Participation points are also built into the grading system for the notebook pages. You may select just the first page for participation/attendance.

Postlab Write-up & Questions: See the Report Information handout for report requirements. Your electronic notebook pages must be turned in along with the specific postlab assignment. Printed data such as NMR spectra are always required with the postlab assignment when available. See the course calendar for due dates. **Late reports lose 5 points per day (24-hr period).** Late lab reports will only be accepted up to one week after the original due date. Graded reports will be returned by your TA as soon as possible.

Postlab writeups, questions & notebook pages are typically due on the second day of the following experiment. The exception to this is the last postlab assignment which will be due on July 2. Submit postlab assignments on Gradescope. Be sure to pay attention to both the assignment title and the TA name to make sure you are submitting to the correct assignment. Make sure to properly assign the questions to their appropriate location in your work. The point distribution will typically be as follows; any modifications will be noted on the experiment handout. Final scores for each experiment that reflect all components of the report combined will be posted on LATTE.

Report section	Points
Prelab	25
Electronic Notebook pages: procedure, discussion, etc.	25
Write-up (Introduction, Procedure, etc.)	30
Post-lab questions	20

While it is important that you submit your work on time, we understand that life sometimes throws curveballs, and so we offer each student ***one, no-questions-asked, 24-hour*** deadline extension during the semester for any part of a lab report. Please email your TA if you need this extension.

You may not use sites where you submit questions and/or receive solutions (including, but not limited to: Chegg, Course Hero, Reddit, etc.). Each student must submit their own work that they personally completed and indicate if they worked with anyone else while completing the assignment.

Spectroscopy Handout - Chemical structure is central to organic chemistry and accordingly, we will spend a large part of the semester discussing methods that allow for structure elucidation. In line with this learning goal, we have prepared several exercises which allow you to use real data to identify compounds of interest. By engaging in this activity, you will gain a better appreciation for how structure determines not only spectral properties, but also reactivity that you learn about in Chem 25A.

You may not use sites where you submit questions and/or receive solutions (including, but not limited to: Chegg, Course Hero, Reddit, etc.). Each student must submit their own work that they personally completed and indicate if they worked with anyone else while completing the assignment.

Lab Technique Worksheet - While we will cover a variety of laboratory techniques in this course, we do not have time to cover everything. For this assignment, you will select a technique from a list of advanced lab techniques and answer the questions on the worksheet as they pertain to your chosen technique.

You may not use sites where you submit questions and/or receive solutions (including, but not limited to: Chegg, Course Hero, Reddit, etc.). Each student must submit their own work that they personally completed and indicate if they worked with anyone else while completing the assignment.

Make-up Lab Policies

- Make-up labs need to be approved by Prof. Murray (not your TA) prior to the start of the lab period.
- If you attend a make-up lab, your report is due to your regular lab TA one week after you complete the make-up experiment.
- Medically excused absences will be granted a make-up lab. A note from a doctor/medical office may be requested.
- Make-up labs are granted for academic, athletic, and religious conflicts. Your absence should be communicated *at least one week* in advance. Documentation may be requested.
- Other requests for make-up labs will be dealt with on a case-by-case basis.
- To request a makeup lab, please email Prof. Murray explaining the reason for the request, and indicate the day(s) of the week you are available to make up the missed lab.

Evaluation

Final grades will reflect your weighted average on the course assignments listed below. Conversions from weighted average to letter grade are also listed below. Percentages will be rounded to the nearest tenth decimal place.

Class Element	Grade Percentage
Lab Reports (Prelab, Notebook & Postlab Write-Up/Questions)	60%
Lab Lecture Questions	10%
Spectroscopy Handout	15%
Lab Technique Worksheet	15%

Letter Grade	Percentage	Letter Grade	Percentage
A	93.0 – 100.00	C	73.0 – 76.9
A-	90.0 – 92.9	C-	70.0 – 72.9
B+	87.0 – 89.9	D+	67.0 – 69.9
B	83.0 – 86.9	D	63.0 – 66.9
B-	80.0 – 82.9	D-	60.0 – 62.9
C+	77.0 – 79.9	E	0 – 59.9

Regrades

If you suspect there was an error in grading, you may request a regrade of an assessment within *3 days* of the document being returned. Requests made more than 3 days after the document is returned will not be honored. To request a regrade, please email an explanation of the request to Prof. Murray. When a regrade is requested, the entire document will be regraded and the grade on the assignment may go up, down, or remain the same. The exception to this is if there was an error made in adding up the total score, not in assigning points. In this case, the total points will simply be added up again and corrected.

Essential Resources

Accommodations

Brandeis seeks to welcome and include all students. If you are a student who needs accommodations as outlined in an accommodations letter, I want to support you. In order to provide test accommodations, I need the letter more than 48 hours in advance. I want to provide your accommodations, but cannot do so retroactively. If you have questions about documenting a disability of requesting accommodations,



please contact Student Accessibility Support (SAS <https://www.brandeis.edu/accessibility/>) at 781.736.3470 or access@brandeis.edu.

Apps or Tools/Equipment

In order to complete work for this course you must have access to the following:

- The internet.
- A webcam either on your laptop, tablet or cell phone. (Please contact instructor if this is an issue.)
- A laptop or tablet capable of accessing and completing tasks in LATTE, Echo360, Zoom, G-Suite, and Gradescope.
- A method of uploading images of handwritten work to LATTE and Gradescope. There are many options for this including a scanner, a digital camera that can connect to your computer/tablet, a scanner app on your phone/tablet, the "Notes" app on an iPhone, etc.
- ChemDraw is not required but is recommended. Please see LATTE for instructions for downloading the program (free to students enrolled in Chem 25/29).

LATTE

LATTE is the Brandeis learning management system: <http://latte.brandeis.edu>. Login using your UNET ID and password.

Library

The Brandeis Library collections and staff offer resources and services to support Brandeis students, faculty and staff. These include workshops, consultations, collaboration, materials and instruction on emerging trends in technologies such as machine learning, emerging trends in research such as data visualization, and emerging trends in scholarship such as open access. Librarians at the Circulation Desk, Research Help Desk, Archives & Special Collections, Sound & Image Media Studios, MakerLab, AutomationLab, and Digital Scholarship Lab are available to help you.

<https://www.brandeis.edu/library/about/index.html>

Privacy

This class requires the use of tools that may disclose your coursework and identity to parties outside the class. To protect your privacy, you may choose to use a pseudonym/alias rather than your name in submitting such work. You must share the pseudonym/ alias with me and any teaching assistants as needed. Alternatively, with prior consultation, you may submit such work directly to me.

Student Support

Brandeis University is committed to supporting all our students so they can thrive. The following resources are available to help with the many academic and non-academic factors that contribute to student success (finances, health, food supply, housing, mental health counseling, academic advising, physical and social activities, etc.). Please explore the many links on this Support at Brandeis page (<https://www.brandeis.edu/support/undergraduatestudents/browse.html>) to find out more about the resources that Brandeis provides to help you and your classmates to achieve success

Teaching Continuity

Due to the remote method of instruction used in this course, a switch by the University to fully remote instruction at any point in the semester can be easily accommodated. Due dates for assignments will be reevaluated as necessary in the case of a campus closure or other event that disrupts the class's ability to maintain the originally planned schedule.

The goal for this course is to provide clear and consistent expectations to students. Things may change over the course of the semester that may require us to adapt assignments, due dates, expectations, content delivery, policies, and potentially other aspects of this course. My goal is to be as transparent and honest with you as possible throughout the semester when these changes are necessary. That means I might not always have all the answers all the time, plans might need to change multiple times, and there may be times of uncertainty as we await guidance from the university. I promise to communicate openly and honestly with you throughout this semester. In return, I ask for your patience during times of uncertainty and your willingness to adapt with me. If you ever feel confused or overwhelmed by the expectations of this course, please do not hesitate to contact the instructor.

Course Plan

The schedule below is subject to change. Any necessary adjustments will be announced to LATTE and a new version of the schedule will be posted. All due dates and times are in EST.

Week-Class	Date	Topics
1-1	6/1	Experiment 1 – Day 1 Due at Start of Class (1 pm) <ul style="list-style-type: none"> Nothing Class Agenda (w/ Prof. Murray) <ul style="list-style-type: none"> Introduction IR Spectroscopy Due After Class (5 pm) <ul style="list-style-type: none"> 6/1 Lecture Questions Upcoming Deadlines <ul style="list-style-type: none"> Experiment 1 Prelab – 6/2 @ 1 pm
1-2	6/2	Experiment 1 – Day 2 Due at Start of Class (1 pm) <ul style="list-style-type: none"> Experiment 1 Prelab Class Agenda (w/ TA) <ul style="list-style-type: none"> Experiment 1 – Intro Due After Class (5 pm) <ul style="list-style-type: none"> Nothing Upcoming Deadlines <ul style="list-style-type: none"> Experiment 2 Prelab – 6/3 @ 5 pm Experiment 1 Postlab & Notebook – 6/7 @ 1 pm
1-3	6/3	Experiment 2 – Day 1 Due at Start of Class (1 pm) <ul style="list-style-type: none"> Nothing Class Agenda (w/ Prof Murray) <ul style="list-style-type: none"> Experiment 2 Lab Lecture – TLC & Chromatography IR Spectroscopy Due After Class (5 pm) <ul style="list-style-type: none"> Experiment 2 Prelab 6/3 Lecture Questions Upcoming Deadlines <ul style="list-style-type: none"> Experiment 1 Postlab & Notebook – 6/7 @ 1 pm
2-4	6/7	Experiment 2 – Day 2 Due at Start of Class (1 pm) <ul style="list-style-type: none"> Experiment 1 Postlab & Notebook Class Agenda (w/TA)

		<ul style="list-style-type: none"> Experiment 2 – TLC & Chromatography <p>Due After Class (5 pm)</p> <ul style="list-style-type: none"> Nothing <p>Upcoming Deadlines</p> <ul style="list-style-type: none"> Experiment 3 Prelab – 6/8 @ 5pm Experiment 2 Postlab & Notebook – 6/9 @ 1 pm
2-5	6/8	<p>Experiment 3 – Day 1</p> <p>Due at Start of Class (1 pm)</p> <ul style="list-style-type: none"> Nothing <p>Class Agenda (w/ Prof. Murray)</p> <ul style="list-style-type: none"> Experiment 3 Lab Lecture - Recrystallization ¹H-NMR <p>Due After Class (5 pm)</p> <ul style="list-style-type: none"> Experiment 3 Prelab 6/8 Lecture Questions <p>Upcoming Deadlines</p> <ul style="list-style-type: none"> Experiment 2 Postlab & Notebook – 6/9 @ 1 pm
2-6	6/9	<p>Experiment 3 – Day 2</p> <p>Due at Start of Class (1 pm)</p> <ul style="list-style-type: none"> Experiment 2 Postlab & Notebook <p>Class Agenda (w/ TA)</p> <ul style="list-style-type: none"> Experiment 3 – Recrystallization <p>Due After Class (5 pm)</p> <ul style="list-style-type: none"> Nothing <p>Upcoming Deadlines</p> <ul style="list-style-type: none"> Experiment 4 Prelab – 6/10 @ 5 pm Experiment 3 Postlab & Notebook – 6/14 @ 1 pm
2-7	6/10	<p>Experiment 4 – Day 1</p> <p>Due at Start of Class (1 pm)</p> <ul style="list-style-type: none"> Nothing <p>Class Agenda (w/ Prof. Murray)</p> <ul style="list-style-type: none"> Experiment 4 Lab Lecture - Extraction ¹H-NMR <p>Due After Class (5 pm)</p> <ul style="list-style-type: none"> Experiment 4 Prelab 6/10 Lecture Questions <p>Upcoming Deadlines</p> <ul style="list-style-type: none"> Experiment 3 Lab Report – 6/14 @ 1 pm
3-8	6/14	<p>Experiment 4 – Day 2</p>

		<p>Due at Start of Class (1 pm)</p> <ul style="list-style-type: none"> Experiment 3 Lab Report <p>Class Agenda (w/ TA)</p> <ul style="list-style-type: none"> Experiment 4 – Extraction <p>Due After Class (5 pm)</p> <ul style="list-style-type: none"> Nothing <p>Upcoming Deadlines</p> <ul style="list-style-type: none"> Experiment 5 Prelab – 6/15 @ 5 pm Experiment 4 Postlab & Notebook – 6/16 @ 1 pm Lab Technique Worksheet – 6/21 @ 1 pm
3-9	6/15	<p>Experiment 5 – Day 1</p> <p>Due at Start of Class</p> <ul style="list-style-type: none"> Nothing <p>Class Agenda (w/ Prof Murray)</p> <ul style="list-style-type: none"> Experiment 5 Lab Lecture - Distillation $^1\text{H-NMR}$ <p>Due After Class (5 pm)</p> <ul style="list-style-type: none"> Experiment 5 Prelab 6/15 Lecture Questions <p>Upcoming Deadlines</p> <ul style="list-style-type: none"> Experiment 4 Lab Report – 6/16 @ 1 pm Lab Technique Worksheet – 6/21 @ 1 pm
3-10	6/16	<p>Experiment 5 – Day 2</p> <p>Due at Start of Class (1 pm)</p> <ul style="list-style-type: none"> Experiment 4 Postlab & Notebook <p>Class Agenda (w/TA)</p> <ul style="list-style-type: none"> Experiment 5 - Distillation <p>Due After Class (5 pm)</p> <ul style="list-style-type: none"> Nothing <p>Upcoming Deadlines</p> <ul style="list-style-type: none"> Experiment 6 Prelab – 6/17 @ 5 pm Experiment 5 Postlab & Notebook – 6/21 @ 1pm Lab Technique Worksheet – 6/21 @ 1 pm
3-11	6/17	<p>Experiment 6 – Day 1</p> <p>Due at Start of Class (1 pm)</p> <ul style="list-style-type: none"> Nothing <p>Class Agenda (w/ Prof. Murray)</p> <ul style="list-style-type: none"> Experiment 6 Lab Lecture – Scifinder & Reaxys $^1\text{H-NMR}$

		<p>Due After Class (5 pm)</p> <ul style="list-style-type: none"> Experiment 6 Prelab 6/17 Lecture Questions <p>Upcoming Deadlines</p> <ul style="list-style-type: none"> Experiment 5 Postlab & Notebook – 6/21 @ 1 pm Lab Technique Worksheet – 6/21 @ 1 pm
4-12	6/21	<p>Experiment 6 – Day 2</p> <p>Due at Start of Class (1 pm)</p> <ul style="list-style-type: none"> Experiment 5 Postlab & Notebook Lab Technique Worksheet <p>Class Agenda (w/TA)</p> <ul style="list-style-type: none"> Experiment 6 – Scifinder & Reaxys <p>Due after class (5 pm)</p> <ul style="list-style-type: none"> Nothing <p>Upcoming Deadlines</p> <ul style="list-style-type: none"> Experiment 7 Prelab – 6/22 @ 5 pm Experiment 6 Postlab & Notebook – 6/23 @ 1 pm Spectroscopy Packet – 7/2 @ 1 pm
4-13	6/22	<p>Experiment 7 – Day 1</p> <p>Due at Start of Class (1 pm)</p> <ul style="list-style-type: none"> Nothing <p>Class Agenda (w/Prof. Murray)</p> <ul style="list-style-type: none"> Experiment 7 Lab Lecture – Alkene Hydration ¹H-NMR <p>Due After Class (5 pm)</p> <ul style="list-style-type: none"> Experiment 7 Prelab 6/22 Lecture Questions <p>Upcoming Deadlines</p> <ul style="list-style-type: none"> Experiment 6 Postlab & Notebook – 6/23 @ 1 pm Spectroscopy Packet – 7/2 @ 1 pm
4-14	6/23	<p>Experiment 7 – Day 2</p> <p>Due at Start of Class (1 pm)</p> <ul style="list-style-type: none"> Experiment 6 Postlab & Notebook <p>Class Agenda (w/TA)</p> <ul style="list-style-type: none"> Experiment 7 – Alkene Hydration <p>Due After Class (5 pm)</p> <ul style="list-style-type: none"> Nothing <p>Upcoming Deadlines</p> <ul style="list-style-type: none"> Experiment 8 Prelab – 6/24 @ 5pm

		<ul style="list-style-type: none"> Experiment 7 Postlab & Notebook – 6/28 @ 1 pm Spectroscopy Packet – 7/2 @ 1 pm
4-15	6/24	<p>Experiment 8 – Day 1</p> <p>Due at Start of Class (1 pm)</p> <ul style="list-style-type: none"> Nothing <p>Class Agenda (w/Prof Murray)</p> <ul style="list-style-type: none"> Experiment 8 Lab Lecture – Alcohol Substitution ^1H-NMR <p>Due After Class (5 pm)</p> <ul style="list-style-type: none"> Experiment 8 Prelab 6/24 Lecture Questions <p>Upcoming Deadlines</p> <ul style="list-style-type: none"> Experiment 7 Postlab & Notebook – 6/28 @ 1 pm Spectroscopy Packet – 7/2 @ 1 pm
5-15	6/28	<p>Experiment 8 – Day 2</p> <p>Due at Start of Class (1 pm)</p> <ul style="list-style-type: none"> Experiment 7 Postlab & Notebook <p>Class Agenda (w/TA)</p> <ul style="list-style-type: none"> Experiment 8 – Alcohol Substitution <p>Due After Class (5 pm)</p> <ul style="list-style-type: none"> Nothing <p>Upcoming Deadlines</p> <ul style="list-style-type: none"> Experiment 9 Prelab – 6/29 @ 5 pm Experiment 8 Postlab & Notebook – 6/30 @ 1 pm Spectroscopy Packet – 7/2 @ 1 pm
5-16	6/29	<p>Experiment 9 – Day 1</p> <p>Due at Start of Class (1 pm)</p> <ul style="list-style-type: none"> Experiment 9 Prelab <p>Class Agenda</p> <ul style="list-style-type: none"> Experiment 9 Lab Lecture (w/ Prof. Murray) Experiment 9 – Design Your Own Experiment (w/ TA) <p>Due After Class (5 pm)</p> <ul style="list-style-type: none"> Experiment 9 Prelab <p>Upcoming Deadlines</p> <ul style="list-style-type: none"> Experiment 8 Lab Report – 6/30 @ 1 pm Experiment 9 Lab Report – 7/2 @ 1pm Spectroscopy Packet – 7/2 @ 1 pm
5-17	6/30	<p>Experiment 9 – Day 2</p> <p>Due at Start of Class (1 pm)</p>

		<ul style="list-style-type: none"> Experiment 8 Postlab & Notebook Pages <p>Class Agenda (w/ TA)</p> <ul style="list-style-type: none"> Experiment 9 – Design Your Own Experiment (if additional work time is needed) <p>Due After Class (5 pm)</p> <ul style="list-style-type: none"> Nothing <p>Upcoming Deadlines</p> <ul style="list-style-type: none"> Experiment 9 Postlab & Notebook – 7/2 @ 1 pm Spectroscopy Packet – 7/2 @ 1 pm
	7/2	<p>Due at 1 pm</p> <ul style="list-style-type: none"> Experiment 9 Postlab & Notebook – 7/2 @ 1 pm Spectroscopy Packet – 7/2 @ 1 pm <p>All work for this class must be turned in by 1pm on 7/2. No work will be accepted after this date.</p>